

From: Samuel Hammar [mailto:hammar.dsl@hotmail.com]

Sent: Friday, April 03, 2009 5:42 PM

To: Bernard Bailor

Subject: Libby

I am responding to your question as to whether there are pathologic/morphologic differences between asbestos-related diseases such as mesothelioma that occur in Libby, Montana vs. those that occur in Bremerton, Washington or some other city. In my opinion, there is absolutely no difference. Mesotheliomas and other asbestos-related diseases are the same. Samuel P. Hammar, M.D.

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LIBBY, MONTANA ASBESTOS



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My name is Samuel P. Hammar, M.D., and I am board certified in anatomic and clinical pathology. My area of expertise is pulmonary pathology and my primary area of interest is that of asbestos-related diseases such as mesothelioma.

I previously submitted my report on asbestos-induced lung and pleural disease on behalf of the W.R. Grace Asbestos Claimants Committee on September 13, 2006 in which I discussed asbestos, mesothelioma, lung cancer, other cancers and non-neoplastic diseases caused by asbestos. A summary of my statements concerning mesothelioma and lung cancer is listed below.

Mesothelioma summary:


1. Mesothelioma is a fatal cancer whose only epidemiologically known cause is exposure to asbestos fibers. The latency period for mesothelioma is between 10 and 70 years.
2. All types of asbestos fibers cause mesothelioma — there is no type of asbestos fiber which does not cause mesothelioma (WHO policy paper: *Elimination of asbestos-related diseases*).
3. Mesothelioma can be caused by very brief exposures to very low concentrations of asbestos fibers — there is no level of exposure below which mesothelioma cannot arise (Hillerdal G. *Mesothelioma: cases associated with non-occupational and low dose exposures*. Occup Environ Med 1999;56:505-513).
4. It is the cumulative exposure to asbestos which causes disease and, for this reason, any identifiable exposure to asbestos can cause or contribute to the development of mesothelioma.
5. Mesothelioma can arise from household or bystander exposure or in persons who work in occupations not typically associated with exposure to asbestos. (Joubert L, Seidman H, Selikoff IJ. *Mortality experience of family contacts of asbestos factory workers*. Ann NY Acad Sci 1991;643:416-418.)

Lung cancer summary:

1. All types of asbestos fibers cause lung cancer - there is no type of asbestos fiber which cannot cause lung cancer.
2. It is the cumulative exposure to asbestos which causes disease and, for this reason, any identifiable exposure to asbestos can cause or contribute to the development of lung cancer provided the patient has been exposed to a sufficient dose of asbestos to attribute the lung cancer to the asbestos exposure. In my opinion, lung cancer can be attributed to asbestos exposure if the patient has one year of heavy occupational exposure to asbestos (e.g. shipyard workers and construction workers who were on site during the spraying of asbestos insulation) or five years of more moderate asbestos exposure (e.g. sheet metal workers and carpenters).
3. Lung cancer can be attributed to asbestos exposure even in the absence of radiologically detectable asbestosis.
4. Asbestos exposure combined with smoking is much more likely to increase the risk of developing lung cancer than either smoking or asbestos exposure alone.

On July 30, 2007 I reviewed expert witness reports submitted from Grace's experts and rebutted/commented on their statements.

I am now asked to comment on "Libby, Montana asbestos" and its effects. During the course of my career, I have examined pathology specimens of persons exposed to asbestos vermiculite ore mined in Libby, Montana (examples: case of Marvin Flatt L08-347 and case of Richard Eugene Pettit L07-215). In my opinion, there is no difference between the extent of disease found in persons exposed to asbestos mined in Libby, Montana and those pathology specimens of persons exposed to asbestos mined elsewhere. The only thing that is unique about asbestos from Libby, Montana is that Libby vermiculite deposits also contain amphibole asbestos minerals including tremolite, actinolite, richterite and winchite. Historically, Libby mine workers have experienced high exposure to amphibole asbestos and, as a group, have experienced the health consequences of those exposures. Libby mine workers have experienced asbestos-associated disease as a consequence of exposure to asbestos, but the extent of their disease, in my opinion, is no greater than that of persons exposed to asbestos elsewhere.


Samuel P. Hammar, M.D.